

VARYING CONDUCTANCE OUT OF A PROCESS REGION TO CONTROL GAS FLUX IN AN ALD REACTOR

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ABSTRACT OF THE DISCLOSURE

10 A deposition system includes a process chamber for conducting an ALD process
to deposit layers on a substrate. In one embodiment, instead of varying the gas flux on a
substrate in the chamber by controlling the flow of gas upstream of the process chamber,
the gas flux on the substrate is controlled by controlling the conductance between the
process chamber and a lower pressure volume outside the process chamber. The flux of
the gas on the substrate varies inversely with the chamber conductance, such that the flux
15 of the gas on the substrate increases when the conductance decreases. Various methods
of performing an ALD process by controlling the conductance are disclosed as well as
various structures for controlling the conductance.